Table 1

λ= (193 nm)

No.	r (mm)	d (mm)	Glass	H_{max} (mm)
0	∞	15.691		64
21	-154.467	11.998	SiO_2	64
	446.437	12.272		73
22	-723.377	25.894	SiO_2	74
	-222.214	.824		80
23	920.409	26.326	SiO_2	89
	-287.371	.750		90
24	499.378	30.073	SiO_2	94
	-358.998	.751		94
25	238.455	27.454	SiO_2	90
	-3670.974	.750		89
26	182.368	13.402	SiO_2	81
	115.264	31.874		72
27	-710.373	13.095	SiO_2	72
	-317.933	2.550		71
28	-412.488	8.415	SiO_2	69
	132.829	32.913		65
29	-184.651	11.023	SiO_2	66
	2083.916	28.650		71
30	-120.436	10.736	SiO_2	72
	-629.160	16.486		86
31	-213.698	24.772	SiO_2	89
	-151.953	.769		95
32	11013.497	48.332	SiO_2	115
	-202.880	.750		118
33	-1087.551	22.650	SiO_2	122
	-483.179	.750		124
34	1797.628	23.724	SiO_2	125
	-1285.887	.751		125
35	662.023	23.589	SiO_2	124
	45816.292	.750		123
36	361.131	22.299	SiO_2	119
	953.989	.750		117
37	156.499	49.720	CaF_2	107
	2938.462	.154		103
38	377.619	8.428	SiO_2	94
	123.293	40.098		80
39	-425.236	10.189	SiO_2	78
	413.304	18.201		74
40	-302.456	6.943	SiO_2	73
	190.182	46.542		73
41	-109.726	9.022	SiO_2	73
	-1968.186	5.547		89
42	-765.656	37.334	CaF_2	90
	-146.709	.753		94
43	925.552	49.401	CaF_2	108
	-193.743	.847		109
44	507.720	22.716	CaF_2	105
	-1447.522	21.609		104
45	-250.873	11.263	SiO_2	104
	314.449	2.194		105

Table 1 (continued)

46	316.810	28.459	CaF_2	106
	-1630.246	4.050		106
AS	Diaphragm	15.000		106
47	312.019	45.834	CaF_2	108
	-388.881	11.447		108
48	-242.068	14.119	SiO_2	107
	312.165	4.687		112
49	327.322	49.332	SiO_2	114
	-372.447	14.727		115
50	-234.201	26.250	SiO_2	115
	-226.616	.850		118
51	203.673	45.914	SiO_2	113
	-3565.135	.751		111
52	157.993	29.879	SiO_2	94
	431.905	14.136		90
53	-1625.593	12.195	SiO_2	88
	230.390	.780		76
54	124.286	66.404	SiO_2	71
	538.229	1.809		46
55	778.631	4.962	CaF_2	45
	43.846	2.050		34
56	43.315	23.688	CaF_2	33
	1056.655	2.047		29
P2	∞	2.000	CaF_2	27
	∞	12.000		26
IM	∞			14

Image-side numerical aperture 0.75 Image field diameter 29 mm
Lenses 37 of which CaF_2 5
Chromatic longitudinal error CHL (500 pm) = 0.15 mm
Chromatic transverse error CHV (500 pm) = -0.55 mm

Table 2

m736a

Lens	Radius	Thickness	Glasses	½ lens diameter
	infinity	16.6148		60.752
L201	-140.92104	7.0000	SiO2	61.267
	-4944.48962	4.5190		67.230
L202	-985.90856	16.4036	SiO2	68.409
	-191.79393	.7500		70.127
L203	18376.81346	16.5880	SiO2	73.993
	-262.28779	.7500		74.959
L204	417.82018	21.1310	SiO2	77.129
	-356.76055	.7500		77.193
L205	185.38468	23.3034	SiO2	74.782
	-1198.61550	A7500		73.634
L206	192.13950	11.8744	SiO2	68.213
	101.15610	27.6353		61.022
L207	-404.17514	7.0000	SiO2	60.533
	129.70591	24.1893		58.732
L208	-235.98146	7.0584	SiO2	59.144
	-203.88450	.7500		60.201
L209	-241.72595	7.0000	SiO2	60.490
	196.25453	33.3115		65.017
L210	-122.14995	7.0000	SiO2	66.412
	-454.65265	A 10.8840		77.783
L211	-263.01247	22.6024	SiO2	81.685
	-149.71102	1.6818		86.708
L212	-23862.31899	43.2680	SiO2	104.023
	-166.87798	.7500		106.012
L213	340.37670	44.9408	SiO2	115.503
	-355.50943	.7500		115.398
L214	160.11879	41.8646	SiO2	102.982
	4450.50491	.7500		100.763
L215	172.51429	14.8261	SiO2	85.869
	116.88490	35.9100		74.187
L216	-395.46894	7.0000	SiO2	72.771
	178.01469	28.0010		66.083
L217	-176.03301	7.0000	SiO2	65.613
	188.41213	36.7224		66.293
L218	-112.43820	7.0059	SiO2	66.917
	683.42330	17.1440		80.240
L219	-350.01763	19.1569	SiO2	82.329
	-194.58551	.7514		87.159
L220	-8249.50149	35.3656	SiO2	99.995
	-213.88820	.7500		103.494
L221	657.56358	31.3375	SiO2	114.555
	-428.74102	.0000		115.245
	infinity	2.8420		116.016
	diaphragm	.0000		116.016
L222	820.30582	27.7457	SiO2	118.196
	-520.84842	18.4284		118.605
L223	330.19065	37.7586	SiO2	118.273
	-672.92481	23.8692		117.550
L224	-233.67936	10.0000	SiO2	116.625
	-538.42627	10.4141		117.109

Table 2 (continued)

L225	-340.26626	21.8583	SiO2	116.879
	436.70958	.7500		117.492
L226	146.87143	34.5675	SiO2	100.303
	-224.85666	.7500		97.643
L227	135.52861	29.8244	SiO2	86.066
	284.57463	18.9234		79.427
L228	-7197.04545	11.8089	SiO2	72.964
	268.01973	.7500		63.351
L229	100.56453	27.8623	SiO2	56.628
	43.02551	2.0994		36.612
L230	42.30652	63.9541	SiO2	36.023
	262.65551	1.9528		28.009
	Infinity	12.0000		27.482
	Infinity			13.602

Aspheric Constants

Coefficients of aspheric surface 29:

EX = -0.17337407 * 10^{3}
C 1 = 0.15292522 * 10^{-7}
C 2 = 0.18756271 * 10^{-11}
C 3 = -0.40702561 * 10^{-16}
C 4 = 0.26176919 * 10^{-19}
C 5 =-0.36300252 * 10^{-23}
C 6 = 0.42405765 * 10^{-27}

Coefficients of aspheric surface 27:

EX = -0.36949981 * 10^{1}
C 1 = 0.20355563 * 10^{-7}
C 2 = -0.22884234 * 10^{-11}
C 3 = -0.23852614 * 10^{-16}
C 4 = -0.19091022 * 10^{-19}
C 5 = 0.27737562 * 10^{-23}
C 6 = -0.29709625 * 10^{-27}

Table 3

Lens	Radius	Thickness	Glasses	½ lens diameter
	Infinity	17.8520		60.958
L301	-131.57692	7.0000	SiO_2	61.490
	-195.66940	.7500		64.933
L302	-254.66366	8.4334	SiO_2	65.844
	-201.64480	.7500		67.386
L303	-775.65764	14.0058	SiO_2	69.629
	-220.44596	.7500		70.678
L304	569.58638	18.8956	SiO_2	72.689
	-308.25184	.7500		72.876
L305	202.68033	20.7802	SiO_2	71.232
	-1120.20883	A7500		70.282
L306	203.03395	12.1137	SiO_2	65.974
	102.61512	26.3989		59.566
L307	-372.05336	7.0000	SiO_2	59.203
	144.40889	23.3866		58.326
L308	-207.93626	7.0303	SiO_2	58.790
	-184.65938	.7500		59.985
L309	-201.97720	7.0000	SiO_2	60.229
	214.57715	33.1495		65.721
L310	-121.80702	7.0411	SiO_2	67.235
	-398.26353	A 9.7571		79.043
L311	-242.40314	22.4966	SiO_2	81.995
	-146.76339	.7553		87.352
L312	-2729.19964	45.3237	SiO_2	104.995
	-158.37001	.7762		107.211
L313	356.37642	52.1448	SiO_2	118.570
	-341.95165	1.1921		118.519
L314	159.83842	44.6278	SiO_2	105.627
	234.73586	.7698		102.722
L315	172.14697	16.8960	SiO_2	88.037
	119.53455	36.6804		75.665
L316	-392.62196	7.0000	SiO_2	74.246
	171.18767	29.4986		67.272
L317	-176.75022	7.0000	SiO_2	66.843
	186.50720	38.4360		67.938
L318	-113.94008	7.0213	SiO_2	68.650
	893.30270	17.7406		82.870
L319	-327.77804	18.9809	SiO_2	85.090
	-192.72640	.7513		89.918
L320	-3571.89972	34.3608	SiO_2	103.882
	-209.35555	.7500		106.573
L321	676.38083	62.6220	SiO_2	119.191
	-449.16650	.0000		119.960
	Infinity	2.8420		120.991
	Diaphragm	.0000		120.991
L322	771.53843	30.6490	SiO_2	123.568
	-525.59771	13.4504		124.005
L323	330.53202	40.0766	SiO_2	123.477
	-712.47666	23.6787		122.707
L324	-250.00950	10.0000	SiO_2	121.877
	-513.10270	14.8392		121.995
L325	-344.63359	20.3738	SiO_2	121.081
	-239.53067	.7500		121.530

Table 3 (continued)

L326	146.13385	34.7977	SiO_2	102.544
	399.32557	.7510		99.992
L327	132.97289	29.7786	SiO_2	87.699
	294.53397	18.8859		82.024
L328	-3521.27938	A 11.4951	SiO_2	75.848
	287.11066	.7814		65.798
L329	103.24804	27.8602	SiO_2	58.287
	41.64286	1.9089		36.734
L330	41.28081	31.0202	SiO_2	36.281
	279.03201	1.9528		28.934
	infinity	12.0000		28.382
	infinity			13.603

Aspheric Constants

Coefficients of aspheric surface 29:

EX = -0.16784093 * 10^{3}
C 1 = 0.49600479 * 10^{-9}
C 2 = 0.31354487 * 10^{-11}
C 3 = -0.65827200 * 10^{-16}
C 4 = 0.44673095 * 10^{-19}
C 5 = -0.73057048 * 10^{-23}
C 6 = 0.91524489 * 10^{-27}

Coefficients of aspheric surface 27:

EX = -0.22247325 * 10^{1}
C 1 = 0.24479896 * 10^{-7}
C 2 = -0.22713172 * 10^{-11}
C 3 = 0.36324126 * 10^{-16}
C 4 = -0.17823969 * 10^{-19}
C 5 = 0.26799048 * 10^{-23}
C 6 = -0.27403392 * 10^{-27}

Coefficients of aspheric surface 31:

EX = 0
C 1 = -0.45136584 * 10^{-09}
C 2 = 0.34745936 * 10^{-12}
C 3 = 0.11805250 * 10^{-17}
C 4 = -0.87762405 * 10^{-21}

Table 4

No.	r (mm)	d (mm)	Glass
0b		36.005	
601	-1823.618	15.518	Quartz Glass
	-214.169	10.000	
602	-134.291	7.959	Quartz Glass
	328.009	6.376	
603	783.388	26.523	Quartz Glass
	-163.805	.600	
604	325.109	20.797	Quartz Glass
	-499.168	1.554	
605	224.560	24.840	Quartz Glass
	-403.777	.600	
606	142.336	9.000	Quartz Glass
	86.765	23.991	
607	6387.721	7.700	Quartz Glass
	148.713	21.860	
608	-185.678	8.702	Quartz Glass
	237.204	30.008	
609	-104.297	9.327	Quartz Glass
	-1975.424	12.221	
610	-247.819	17.715	Quartz Glass
	-152.409	.605	
611	1278.476	40.457	Quartz Glass
	-163.350	.778	
612	697.475	28.012	Quartz Glass
	-346.153	2.152	
613	232.015	28.068	Quartz Glass
	-3080.194	2.606	
614	219.153	21.134	Quartz Glass
	434.184	9.007	
615	155.091	13.742	Quartz Glass
	103.553	34.406	
616	-207.801	8.900	Quartz Glass
	131.833	35.789	
617	-118.245	9.299	Quartz Glass
	1262.191	27.280	
618	-121.674	42.860	Quartz Glass
	-151.749	.825	
619	-366.282	20.128	Quartz Glass
	-236.249	.838	
620	2355.228	31.331	Quartz Glass
	-296.219	2.500	
P61	∞	6.000	Quartz Glass
	∞	12.554	
AS			
621	774.283	29.041	Quartz Glass
	-782.899	.671	
622	456.969	28.257	Quartz Glass
	-1483.609	.603	
623	227.145	30.951	Quartz Glass
	658.547	36.122	
624	-271.535	15.659	Quartz Glass
	-997.381	4.388	

Table 4 (continued)

625	-1479.857	27.590	Quartz Glass
	-288.684	.604	
626	259.988	22.958	Quartz Glass
	1614.379	.600	
627	105.026	29.360	Quartz Glass
	205.658	.600	
628	110.916	16.573	Quartz Glass
	139.712	13.012	
629	499.538	8.300	Quartz Glass
	56.675	9.260	
630	75.908	17.815	Quartz Glass
	51.831	.995	
631	43.727	19.096	Quartz Glass
	499.293	2.954	
P62	∞	2.000	Quartz Glass
	∞	12.000	
Im			